

The invention claimed is:

1 1. A method of detecting and identifying a received signal, comprising the steps of:
2 segmenting the received signal into at least a first and a second segment, each having at
3 least two symbols;
4 correlating each of the symbols in the at least first and second segments with a
5 representative symbol to produce at least a first and a second set of symbol correlation outputs;
6 producing at least a first and a second set of signal identity outputs, the first set of signal
7 identity outputs indicating a degree of match between a first signal represented by the first set of
8 symbol correlation outputs and each of a plurality of expected signal identities, and the second set
9 of signal identity outputs indicating a degree of match between a second signal represented by the
10 second set of symbol correlation outputs and each of the plurality of expected signal identities;
11 providing frequency offset compensation to at least the first and second set of signal
12 identity outputs to produce at least a first and second set of frequency offset compensated signal
13 identity outputs;
14 summing corresponding signal identity outputs from the at least first and second sets of
15 frequency offset compensated signal identity outputs to form a plurality of summed signal
16 identity outputs; and
17 comparing at least one summed signal identity output to a threshold to detect and identify
18 the received signal.

1 2. The method of claim 1, further comprising the step of deinterleaving at least one of the
2 segments to form the at least two symbols.

1 3. The method of claim 1, wherein the representative symbol is the same for at least two
2 symbols.

1 4. The method of claim 1, wherein the threshold is the same for each summed signal
2 identity output.

1 5. A method of detecting and identifying a received signal, comprising the steps of:
2 segmenting the received signal into at least a first and a second segment, each having at
3 least two symbols;

correlating each of the symbols in the at least first and second segments with a
 representative symbol to produce at least a first and a second set of symbol correlation outputs;
 producing at least a first and a second set of signal identity outputs, the first set of signal
 identity outputs indicating a degree of match between a first signal represented by the first set of
 symbol correlation outputs and each of a plurality of expected signal identities, and the second set
 of signal identity outputs indicating a degree of match between a second signal represented by the
 second set of symbol correlation outputs and each of the plurality of expected signal identities;
 providing a first frequency offset compensation to at least the first and second set of
 signal identity outputs to produce at least a first and second set of first frequency offset
 compensated signal identity outputs;
 providing a second frequency offset compensation to at least the first and second set of
 signal identity outputs to produce at least a first and second set of second frequency offset
 compensated signal identity outputs;
 summing corresponding signal identity outputs from the at least first and second sets of
 first frequency offset compensated signal identity outputs to form a first plurality of summed
 signal identity outputs;
 summing corresponding signal identity outputs from the at least first and second sets of
 second frequency offset compensated signal identity outputs to form a second plurality of
 summed signal identity outputs;
 comparing at least one summed signal identity output from the first and second plurality
 of summed signal identity outputs to a threshold to produce a set of threshold exceeding signal
 identity outputs; and
 selecting at least one threshold exceeding signal identity output based on magnitude to
 detect and identify the received signal.